

EXHIBIT 10

1 IN THE UNITED STATES DISTRICT COURT
2 FOR THE EASTERN DISTRICT OF MICHIGAN
3 SOUTHERN DIVISION
4 LEAGUE OF WOMEN VOTERS OF MICHIGAN
5 ROGER J. BRDAK, FREDERICK C. DURHAL
6 JR., JACK E. ELLIS, DONNA E. FARRIS
7 WILLIAM "BILL" J. GRASHA, ROSA L. Case Number
8 HOLLIDAY, DIANA L. KETOLA, JON 17-CV-14148
9 "JACK" G. LASALLE, RICHARD "DICK"
10 W. LONG, LORENZO RIVERA and
11 RASHIDA H. TLAIB,
12 Plaintiffs,
13 vs.
14 RUTH JOHNSON, in her official
15 capacity as Michigan Secretary
16 of State, et al.,
17 Defendants.

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15 DEPOSITION OF YAN LIU
16 September 13, 2018
17 9:00 AM
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23 June Haeme: CSR # 084-003038
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1 output data in Chen's report. So for me to
2 understand how Dr. Chen's algorithms and methods
3 work, I need to look at the source code that
4 compiled it into that machine code.

5 Q. Have you compiled the draft source code
6 that you received?

7 A. Yes.

8 Q. And have you run simulations using those
9 JAR files?

10 A. I tried.

11 Q. Were you successful?

12 A. I couldn't produce any output in six
13 hours. I think his code needs a long time to run,
14 maybe days or weeks. I saw one piece of code in his
15 state House simulation or his state Senate
16 simulation code, I don't remember clearly which one,
17 there's a piece of a code saying that don't
18 terminate the simulation before 40 days, so that's
19 something I didn't quite understand, but that gave
20 me a sense as to how long it requires to run the
21 code maybe. And I tried, I tried both the JAR files
22 he send originally and the JAR file I created from
23 the draft code. None of them could produce any
24 simulation output in six hours on my laptop, and my
25 laptop's hardware is pretty recent.

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1 could draw the conclusion that the result -- but
2 maybe I should describe his results first.

3 In short, he claims that for all of the
4 3,000 simulations he run, he produced 3,000 maps,
5 and none of these maps is worse than the enacted
6 plan in terms of compactness and the number of city
7 or county breaks, population deviation, and
8 political measures, including the Republican
9 district measure and median-mean difference, and the
10 third one is the efficiency gap. So I was very
11 surprised to see that because Dr. Chen claims that
12 it is a random sampling process, and it's very rare
13 to see the samples all better than the enacted plan.

14 So I analyzed his code. Only from his
15 code I found that his code was designed to only
16 output better maps. If the code produces a worse
17 map, it doesn't output. And what I mean by better,
18 it means not only better than the current enacted
19 plan, but also he defined a set of rules. For
20 example, for the city and the county breaks at state
21 House level, the number for city breaks has to be
22 less or equal -- less than or equal to 14 and the
23 number for county breaks has to be less than or
24 equal to 27. That's in his draft code. And those
25 numbers are better than, already better than the

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1 Q. At any time did the executable files stop
2 running or produce errors or did they just continue
3 to cycle without getting to output?

4 A. For the six hours, it was hanging there,
5 just hanging there, I had to kill the process, so it
6 didn't produce -- it didn't quit abnormally.

7 Q. That's what I was getting at. In the
8 time -- in the six hour time period, you weren't
9 able to produce output, but it didn't quit
10 abnormally, is that what you said?

11 A. Right.

12 Q. In preparing -- well, let me withdraw
13 that. Having now looked over the draft source code
14 you received more recently, has that caused you to
15 want to change any of the conclusions in your
16 report?

17 A. Yes.

18 Q. Which ones?

19 A. I would say not change it. To add to it.

20 Q. Okay.

21 A. Originally I didn't understand the
22 algorithm and the method details described in Chen's
23 report because the description was a little vague
24 and I didn't understand why the data looked the way
25 he presented it. After I analyzed his draft code, I

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1 enacted plan.

2 And in his decompiled, I called it
3 decompiled code from the final executables, that
4 these rules are different, even better, and that I
5 had to basically do a -- de-encryption some type of
6 thing to carefully locate that part of the code
7 because basically it's encrypted text.

8 And in the decompiler code, his rules are
9 that the number for city breaks should be less than
10 or equal to 14 or 13. So that matches what he
11 reports in the corresponding table, that among all
12 the 1,000 maps he produced, the number for city
13 breaks, I believe it was city breaks, is either 13
14 or 14, way better than the enacted plan.

15 And because his code runs for a long time
16 and he also instructs the code to output the maps
17 better, the best map for compactness, so then it's
18 not a surprise to see that the output of all of
19 these nonpartisan measures is a lot better than the
20 enacted plan, which is --

21 Q. Go ahead.

22 A. -- problematic in the random sampling
23 process. In the random sampling process, the goal
24 is to discover the underlying true distribution of
25 all nonpartisan legally valid maps. You cannot use